

### **ABSTRACT OF THE DISCLOSURE**

An imaging tomography apparatus, in particular x-ray computed tomography apparatus, for examining an examination subject has at least two acquisition systems, each having a radiator and a data acquisition unit to detect the radiation originating from the associated radiator. The acquisition systems are capable of rotating around a common rotation axis with a constant angular separation in the azimuthal direction. Radiation from only one of the radiators is permitted to reach the examination subject during the rotation of the acquisition systems. Signal contributions by the x-ray tubes not supplying this data acquisition unit with primary radiation arrive are prevented; the projection data set generated by one of the data acquisition units.

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